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A JOURNAL OF HORTICULTURE, LANDSCAPE ART AND FORESTRY

JULY 1, 1891.

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The Value of Rural Beauty.
Editorial.

Bronx Park. (Illustrated.)
By Miss Anna Murray Vail.

Arbutus Arizonica. (With figure.)
By Professor Sargent.

American Wild Flowers.
By F. H. Horsford.

The paper will contain an illustration of the Bronx River, from a photograph, and a figure of Arbutus Arizonica, from a drawing by Mr. C. E. Faxon.

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The President and the Public Forests.

WE have more than once alluded to a section in the act repealing the timber-culture laws, which was approved on the last day of the last session of Congress, and which authorizes the President of the United States, from time to time, to set apart public lands bearing forests or in part covered with timber or undergrowth as public reservations. The final clause of the section reads as follows: "And the President shall by public proclamation declare the establishment of such reservations and the limits thereof." This section has been interpreted as having a more than permissive force. Commissioner Carter, of the General Land Office, has issued a circular to special agents, in which it is held that, for the purpose of carrying into effect the provisions of the act, it is important to reserve all public lands which bear forests or which are covered with timber or undergrowth on which the timber is not absolutely required for the legitimate use and necessities of the residents of the territory or state in which these lands are situated, or for the promotion of settlement or for the development of the natural resources of the region in the immediate vicinity of the forest-lands in question.

The circular goes on to instruct the agents that it is of the first importance to reserve all public lands in mountainous and other regions which are covered with timber or undergrowth, at the head-waters of rivers and along the banks of streams, where such forests are the natural agents for absorbing moisture, checking mountain torrents and preventing the sudden melting of the snow and the floods which follow. Special agents are directed to make a personal examination of such forest-lands, and to acquaint themselves in every possible way with the facts as to the value of these lands for all purposes, and such investigations are to be reported to the Land Office. Furthermore, they are to submit a report, with a recommendation in each case, as to whether the lands examined should be set apart as a reservation, together with the reasons for this recommendation. This recommendation and the reasons therefor, with the full description of the lands under investigation, are to be published in the land offices and in the newspapers of the vicinity, and it must be stated that the object of such publication is to give timely notice of the proposed reservation, so that all persons who have any interest, either in favor of or in opposition to its establishment, may have an opportunity to petition or remonstrate. This must be done in time to have these views considered before final action is taken in regard to the establishment of a reservation. Wherever there seems to be any imminent danger to the timber of any particular tract which has been considered as a proper one for reservation, the agent is to report this danger at once and state his reasons for believing that there is necessity for immediate action.

All this is done in order to lay before the President such information as will enable him to take intelligent action thereon. Of course, there are other means of acquiring information which the President can make use of, and it is altogether proper that any one who has any special knowledge in this direction shall place it at his service. The American Forestry Association, we are glad to see, is taking steps to examine certain forest-areas in order to ascertain whether they should be reserved from settlement. There is very little danger that the Chief Executive of the nation will include too large a fraction of the public domain in these reservations; and even if lands which are more valuable for agriculture than for their forests should be included, it would be very easy afterward to turn them over to settlers. Indeed, we have urged that all forest-lands should be withheld from entry until the data which special agents of the Land Office are now instructed to collect could be ascertained by a commission of scientific men. The present action, however, is much better than no action at all; but what protection is there thrown around these reservations even after the President has made his proclamation to set them apart? So far as we are aware, no legal provision is made for guarding them against depredation or protecting them from fire. It has been our opinion that the United States army was the proper force to use in guarding the forests on the national domain, and we have urged that these forest-lands withdrawn from entry should be placed under the charge of the army. This has been done to some extent in the case of the Yellowstone reservation and the great Sequoia reservations of California. If it is practicable to place such reservations as are declared by the President under this same guardianship, we shall feel that something has been done for our forests which promises to have practical value, and the brief section which was attached to an act relating to quite another matter may prove an important piece of legislation in the history of the forests of the nation.

Do New Englanders Love Flowers?

MR. HAMILTON AIDÉ, in his article in the *Nineteenth Century*, on "Social Aspects of American Life," ventures the remark that "the true love of flowers, the patient, careful love—not the cupidity for cut roses at two dollars apiece—does not seem to be inherent in the national character," and alludes to Miss Wilkins' stories to show that "flowers are an accident, not a daily interest, in village life" in New England.

This might pass as a snap-judgment on the part of a foreign traveler, but how shall we excuse the critic in the *Boston Transcript*, who declares that he "cannot deny the truth of what Mr. Aidé says." He who takes this ground can scarcely be familiar with the old country towns of that section to which one must look for the typical aspects of New England life. Like all the sentiments of its people, the love of flowers is there, not paraded, but profoundly cherished; and if there is no gaudy display in the door-yard, there is sure to be found a corner behind the house,

easily accessible to the kitchen, where old-fashioned plants bloom gayly, and are cherished often from some tender association with the past. Any country doctor in one of the older New England villages can tell these critics that there are almost no houses so homely, but he finds in them, in winter, a few plants in the window, and in summer some bright flowers in a tiny garden, cultivated and watered often by feeble and tired hands. Hard and dreary as are many of the poor little lives of New England villagers, this one touch of color and perfume is there almost invariably, to show that the thirst for beauty is unquenched.

If, with its ungrateful soil and tormenting climate, New England cannot rival Old England in the gay surroundings of its cottage doors, the same love of flowers is there, finding such expression as it may under the cruel conditions of a sterile earth, and burning summer heats and dryness, alternated with sharp east winds, which make a labor as well as a pleasure of a garden.

The Bermuda Palmetto.

WE published last week two views of the Bermuda Cedar (*Juniperus Bermudiana*). On page 307 of the present issue there is reproduced a photograph of the Bermuda Palmetto (*Sabal Blackburniana*) as it appears growing in its native marshes, a species endemic to the islands, and the most interesting plant of their flora after the Cedar. Botanically this Bermuda Palm closely resembles the Palmetto of the coast of Carolina and Florida (*S. Palmetto*), and there is little doubt that, like the Cedar, it was first brought by birds from the mainland, and afterward gradually underwent the slight modifications which serve to distinguish it from its remote ancestor. So very near alike are the two plants that it is only in recent years that the insular Palm has been recognized as a distinct species. It is a curious fact, moreover, that this Palm, although so recently understood, has been cultivated in England a long time without the origin of the cultivated plants being known. The wild specimens sent to Kew for determination, Mr. Hemsley tells us in his botanical report on "The Scientific Results of the Voyage of H. M. S. Challenger," "proved to belong to a species of Palm of which there is evidence that it has been cultivated in England for at least one hundred and fifty years, and of which, besides numerous small ones, there is a magnificent example in the Palm-house at Kew which flowers and bears fruit continuously. The origin of the cultivated Palm was involved in obscurity. In 1737 a small plant of it was presented by Lord Petre to the grandfather of the Mr. Blackburn for whom it was named. The earliest record of its flowering in this country that we have found is in 1818."

S. Blackburniana grows in Bermuda to the height of forty or fifty feet, with a trunk diameter of from twelve to sixteen inches, and produces leaves six or eight feet across, borne on stout stems seven or eight feet in length. At the base of the leaf-blade there is a broad yellow spot which surrounds the end of the stalk and serves to distinguish the Bermuda Palm at a glance from its continental relative. The fruit of the insular plant is considerably larger, too, and was once held in much esteem as an article of food. Jourdan, in his "Discovery of the Bahmudas, otherwise called the Isle of Divels, by Sir Thomas Gates, Sir George Somers and Captain Newport, with divers others," states that "there is a tree called a Palmito-tree which hath a very sweete berrie, upon which the hogs doe most feede; but our men finding the sweetnesse of them did willingly share with the hogs for them, they being very pleasant and wholesome, which made them carelesse almost of any bread with their meate; which occasioned us to carry in a manner all that store of flour we could save for Virginia. The head of the Palmito-tree is very good meate either raw or sodden. It yeeldeth a head which weigheth about twenty pounds, and is farre better meate than any cabbige."

The Palmetto is frequently mentioned in the early annals of the islands, and laws were passed for its preservation. An intoxicating beverage, known as "bibey," was distilled from it, and the leaves have always been used for thatch and for baskets, fans and various fancy articles; and all the vegetables exported from the islands were until a few years ago sent away in the small oblong baskets plaited from Palmetto-leaves. These baskets, now replaced by boxes made of cheap American pine, have almost entirely disappeared, and are only to be found in the shops devoted to supplying the tourist with natural curiosities and other mementos of a visit to the Insulæ æstivarum.

Kew and its Work.

THE following extract is from an article in a recent issue of the *Gardeners' Chronicle*, and it is the preface to some account of the successful journey of Mr. Morris, the Assistant Director of the Royal Gardens, to the West Indies in the interest of economic botany. Now that a movement is on foot for the establishment of a botanic garden in this city it is proper that the people at large should be informed of the possibilities of such an institution, and of what would be expected from it and from its management:

When, in 1841, Sir William Hooker undertook the direction of the Royal Gardens, Kew, that foreseeing botanist laid down a triple course of action. Kew was to be the botanical centre of the empire in a threefold capacity—as a great scientific institution, the headquarters of economic botany, and as a pleasure-ground for the public; each department was to be made as perfect in itself as possible, each was to co-operate with the others for the common benefit. How successfully the idea has been carried out by successive directors is known to all our readers. Kew, as a scientific institution, is absolutely indispensable, and is the acknowledged head of all similar bodies, at home or abroad. In the "gardens," where "collection" was once the dominant aim, selection now prevails. The best and the most suitable plants for particular purposes are grown in masses, so that their qualifications can the better be estimated, while each individual is so cultivated as to display to the fullest advantage its botanical and ornamental characters. Of course, while demonstrations (we use the word in its educational sense) of this character are given for the benefit of the gardener and the delectation of the public, the equally or, so far as Kew is concerned, the much more important functions of experimental cultivation are not neglected. This may not be very attractive to the casual visitor, but it is of the utmost importance to botany and horticulture, and, of course, it furnishes the basis for those more decorative "demonstrations" of which mention has been made. While a certain amount of mere decorative gardening, according to conventional pattern, cannot be dispensed with in a great pleasure-resort like Kew, competition with ordinary gardens and parks in these respects is hardly to be desired. We look to Kew to set the fashion, not to follow it. We depend on it to furnish us with new materials, new illustrations, new developments, new combinations. The educational and instructional element should, without being offensively obtrusive, permeate the whole garden, so that the visitor, delighted with what he sees before him, may, at the same time, and it may be imperceptibly, receive impressions which will serve to expand and refine his taste, and augment his intelligence in the future.

But, in addition to the purely scientific and æsthetic functions which this great garden performs, Kew is the centre of economic botany. The phraseology is somewhat pedantic, but we do not know how to mend it, for the term "applied botany" is hardly more familiar. A visit to either of the Kew museums (there are three) shows, however, at a glance, what is meant, and is calculated to conciliate any gradgrinds who might be disposed to grumble at the expenditure of public moneys for purposes they do not appreciate. These museums furnish the best available concrete reply to the question, which, even in these days of scientific progress and its resultant advantage, some people still put, "Cui bono?" ("What is the use?") From the very first the energies of directors and curators have been turned strongly in this direction, museums have been formed, libraries accumulated, and floras written at Kew expressly with this object. The residents in the colonies have been furnished not only with information

as to the plants to be grown with the greatest advantage commercially, but with the plants themselves. We need not do more than incidentally mention the great part that Kew has taken in the diffusion of such plants as Cinchona, Coffee, Caoutchouc and many others.

Who can estimate the value of the labors which have been carried on in those quiet-looking propagating-houses at Kew for the last half century?

How We Renewed an Old Place.

XI.—RECLAIMING A SALT-MEADOW.

THE fable of Metius Curtius plunging on horseback into the morass which had opened in the Roman Forum, because the oracle had declared that only the best thing in Rome would be of avail to close it up, seems simply to show that the Romans, great engineers as they were, fully recognized that filling up a marsh was a well-nigh endless job, which would require the sacrifice of the best blood and treasure of the state before it was accomplished.

In spite of the illustrious warning given by M. Curtius, there lives not a man with soul so dead as not to be fired with ambition to make dry ground out of his meadow, if he is so unlucky as to own one; and he always starts in with figures on paper to show what a fine income of hay is to result from a comparatively small investment of labor and gravel. But the work goes on, then more work and more gravel, till finally the account of this part of the business gets mislaid, so that by the time the far-distant hay-crop begins to materialize, a page has settled over the amount of capital (literally) sunk, and only the hay returns are brought prominently to the front.

When we first surveyed the half acre or so of salt-grass which had been left over on our side of the fence when the road was built across the meadow, it did not seem of much importance, one way or the other. The English grass grew luxuriantly down to the edge of it, and the soft, fine, salt-hay was excellent for bedding, the only objection being that it was so palatable that the horses ate up their mattress before breakfast every morning.

After the causeway was constructed across the wet ground behind the stable to Winter Street, there did not seem very much reason for meddling further with the marsh, but given a gravel-bank at one end of a farm, and a swamp at the other, and you may depend upon it there will be a marriage between them at no very distant date.

The intercourse between the two of our acquaintance, once begun, was seldom interrupted, the more the meadow saw of the hill the more it wanted to see, and, with a perversity only to be found in meadows, the more it was given the more it wanted of the same kind.

At first it seemed as if a few cart-loads of stones dumped in the lowest parts, where the water stood longest, would be all-sufficient, but the amount of material that this anaconda of a marsh can stow away is, to use the slang of the day, phenomenal.

Piles of stones, rubbish, sand, boughs of trees, old crockery, ashes, the débris of our own and other people's places, it "swallows them all without any remorse," till the top of the fence along the road has nearly disappeared from view, and still it calls for more, and continues to subside.

Across the street our neighbors have tried the experiment before us, so that we are aware that it is unsafe to put soil on this gravel until after it has had a chance to settle for a year or two, otherwise a high tide is liable to come and wash away all the loam out to sea.

As the surface rises the fresh water runs off less easily, so that the enterprise gains in magnitude as it goes along, and the space covered promises to turn out a whole acre instead of half a one, before the job is fairly completed.

Still, time and the hill will fill even this capacious maw, and, though at present in a sketchy condition, the meadow gives promise of a beautiful grass field, which, it is to be hoped, will repay all the labor of its construction.

The tradition goes that the building of the street behind us across his meadow-lot was too much for the gentleman who owned the place at the time it was made, and that he never recovered from the shock of having his estate thus divided and his house-lot spoiled. The enterprise was a formidable one, for it involved the construction of a great stone arch across the stream that drains the meadow, and the laying down of heavy plank rafts for the piers of the stone bridge to stand upon. For years and years the road would be built up to a good height every summer, and then would subside under the influence of the high tides in the autumn and spring, till it seemed as if it would never hold its own, and keep its head above water all the year round.

But constant renewals of the layers of gravel have at length made of it so substantial a causeway that nothing but the very highest of spring-tides prevails against it, and such water as finds itself on our side, forces itself rather under than over it.

Those of our neighbors who have reclaimed land from the main meadow on the other side of the road, have done so by first building a kind of rough dam of stones and clay, and then gradually filling in behind this dam with rubbish, and stones, and sand until they reach the level of the street. When properly covered with loam, after having had plenty of time to settle, this well-watered foundation affords excellent soil for grass, which grows upon it with great luxuriance.

As the road acts still further for a dam between us and the meadow, our task becomes simpler, and we can reclaim our piece of land with far less trouble than our neighbors have had with theirs, and we are encouraged to look for equally good results.

But it is distressing to see the surface of the hill, which we would fain see rolling in graceful slopes to the swale, waving with the forest of our imagination, still vexed by the presence of carts and horses, and torn by the torturing spade.

He who undertakes to change the face of Nature must needs have patience. Monarchs like Nebuchadnezzar may hang gardens in the air in a few months, or a Louis Fourteenth may construct a pleasure-ground like Versailles, by the aid of forty millions and the genius of Le Nôtre, in a few years; but one who has not the resources of an empire at command must imitate more closely Nature's own deliberate and tortuous methods, often seeing the labor of years destroyed in a moment by an unforeseen freak of the old dame, who resents being interfered with, or finding to his dismay that his own scheme has been a mistaken one, and must be revised.

An illustrious townsman of ours started out like ourselves with a bit of salt-meadow, in which he laboriously constructed a pond, spending his hours of ease from the cares of state in building a wall about it, to make a neat and appropriate curb. But after this was accomplished, with much trouble, it proved not to be at all what he wanted, so that there was nothing for it but to fill the hole, and with months of labor bring the meadow into a smoothly turfed field.

Our day of repentance has not yet dawned, but we have a fear that it lurks somewhere behind the horizon. Some modern Metius Curtius may yet have to be found to help fill up the marsh with a horse and wagon, for that Charybdis has already taken toll more than once from a dump-cart, though she has not yet succeeded in swallowing it up in spite of various malicious efforts. She has designs upon the cow, only frustrated by careful watchfulness, and to her deep treachery there is no end. The family purse she long ago put in her pocket, and her mouth yawns for all the future revenues that may accrue for her benefit. She has eaten up a large part of a neighbor's hill, besides taking most unbecoming bites out of our own, and if ever future generations weave a legend about the ancient dragon of Overlea, which demanded a victim every summer, it will be traced by the unraveler of myths of the period, to the unremitting appetite of this hungry meadow.

But who, looking out, on some sweet spring day, upon that beguiling distance, could believe ill of anything so softly lovely as the picturesque marsh of which ours is the fag-end. In the foreground, the richest tones of green are gently blending in the grass; in the middle distance a point runs out toward the stream, laden with fruit-trees in snowy bloom; the Willows near and far are putting on their gray-green coats, making a tender shimmer around their swaying branches and graceful twigs. The little river winds blue and full, here and there amid the grassy stretches, and the distant hills are full of opalescent hues of emerald and pearl, with red of tree-stems, and faintest green hints of foliage, such as Monet would love to paint. The houses of the port, not yet quite veiled by leaves, make spots of white and yellow and red against the deepening background of Elms and Maples. A streak of blue still indicates the harbor; by to-morrow it will have disappeared, for the vision changes like a kaleidoscope—the white of Pear-blossoms passing like a cloud, to be succeeded by the rosy blush of Apple-buds. Each day some well-known feature of the winter landscape grows fainter as the leaves expand, till of a sudden you look for it and it has gone, and in its stead are the full-robed trees. Over all domes a blue sky streaked with faint white cirrus clouds, only the azure reflected in the placid stream below.

An impressionist alone could catch this fleeting beauty of early May—to-day one thing, to-morrow another—and fix it

eternally upon his canvas. The tender grace of early spring, and the glowing glory of autumn are alike evanescent and wonderful expressions on this smiling meadow face. Like a dream, this hint of ineffable beauty melts away, and the impression gives place to a reality of vivid green field, and dark blue water, which will make but a pleasant inland landscape until the August sun burnishes it into ruby and gold, and makes it once more a vision for a painter.

The exquisite must perforce be evanescent, that no touch of commonness may mar its distinction.

The tender grace of a day that is dead

haunts many a spot, otherwise tame enough, with a memory and a knowledge of its capabilities, that make it forever dear and beautiful to him who has seen it under that enchanting glamour lent by a season, or an hour, which imprints upon the brain a picture that can never be forgotten. And when at other times of year I look upon this far reach of often-changing meadow, there abides with it always a memory of the soft and tender charm of early spring, that no reality of November-brown, or winter-snow can wholly drive away.

Hingham, Mass. *M. C. Robbins.*

Winter Studies of the Pine Barren Flora of Lake Michigan.—VI.

NEXT in abundance among the conifers is the White Pine (*P. Strobus*), either in moister and richer ground or mingled with the Gray Pine and Oaks upon the ridges. The trees are mostly small, none more than a couple of feet in diameter. The bright green soft and slender leaves, two to four inches long and in bundles of five, are somewhat tufted at the ends of the branches, giving to this Pine a grace too little appreciated by those in search of trees for ornamental planting. There is a feathery softness in the foliage of the White Pine which is lacking in that of the Scotch and the Austrian Pine, so often seen in parks or in private grounds. The foreign trees appear stiff and rugged beside it. The branches of the older trees are nearly horizontal, and rather slender near the end, and, when the leafage is heavy, may curve or droop a little on this account, and when moved by the wind wave to and fro with a graceful motion. But the wind generally gives them a broken, choppy motion, like a subsiding water-surface on which the storm has spent its force. This is more apparent when their tops can be looked down upon from some commanding height. For use in parks, particularly if the soil is light or sandy, this Pine is admirably adapted. I once came into a pure wood of this tree near Michigan City, Indiana, which had evidently been cared for by the proprietor. The trees were young, the trunks from six inches to a foot in diameter, and not crowded for standards of such dimensions. As a result, the limbs were lower down, and the crowns rounder and more spreading than when pressed upon by others in the thick forest. The sandy ground, well covered by fallen leaves, was completely shaded, and the cool, refreshing grove showed the possibilities of this Pine for park purposes, either when available as a natural wood or planted in harmony with its natural conditions.

Another conifer is the White Cedar, or American Arbor-vitæ (*Thuya occidentalis*). The small trees, from ten to twenty feet in height, either border the sloughs or form small groves in the moist grounds, but are nowhere abundant. Though its foliage resembles that of the Gray Pine in color, in other respects it is quite in contrast with it. This is shown by the form and arrangement of its scale-like leaves, its flat, fan-shaped spray, its numerous branches, the smaller drooping and twisted so as to point various ways, and its bole covered with light-colored shreddy bark. The Red Cedar (*Juniperus Virginiana*) is sparingly found either in company with the White Cedar, or oftener in drier ground. It is scarcely taller, the trunks being rarely more than six or eight inches through. Nearly all are beautiful trees, almost perfect spires, though somewhat grim in habit. The spray is dense, beginning near the ground, and the branches shorten so gradually as to make a conical mass of foliage. The leaves are rusty green and but slightly glossy, and in the winter change to a tanny brown and other shades, which impart to the crown a purplish hue. By means of its different tints it is readily distinguished from the White Cedars, even at a distance, and charmingly varies the effect when grouped with them, its purples and browns mingled with their light, and, in the winter, somewhat faded green. The ordinary, or more typical, leaves of the Red Cedar are blunt and scale-like, but near the ends of the more vigorously growing branches they are stiff and prickly pointed, like those of the common Juniper, though considerably smaller. The youngest trees, till they reach the height of a man, have leaves almost wholly of this character, and entire branches on older trees may be found that look as if a branch from a different species had been fastened to it. I have taken from the same tree three forms of spray—that with ordinary leaves, that with the pointed, awl-shaped leaves, and that with the two commingled.

The common Juniper (*Juniperus communis*) is often met with, especially near the shore of the lake, though clumps of it occur throughout the sand region, so that it is the most widely diffused of the conifers here. Some of the shrubs attain a large size, the prostrate limbs from three to six inches in diameter. Clumps are found more than thirty feet across in their longer diameter, their general shape being oval or circular. Those, from a single root, sometimes measure twenty-five feet, and those from ten to fifteen feet are not unusual. The color of the bushes is considerably variegated in the winter. The smaller branches are brownish or purplish near the end, the leaves changing somewhat in color. Lower down, or nearer the ground, they preserve their look of glossy green. The lower surface of the leaves shows more in the cold weather than in the summer. The spray is flattish, but the ultimate branches tend to rise into a vertical position, or twist upon their support, thus interfering with their flatness, and exposing the glaucous under sides of the leaves, so that the ends of the branches seem to be covered with hoar-frost. The appearance is so deceptive that upon a day suitable for frost actual touch may be needed to convince one of his error. This varies their color still more. The green or bluish green berries are commonly abundant, and this also gives variety to their general appearance. These do not assume their dark blue color till the season following the time of flowering, the fruit ripening the second year.

There are occasional groves of Tamarack (*Larix larcina*), or some trees may be found by the edges of sphagnous swamps. The largest areas comprise but a few acres, and on the whole the tree is scarce. It is of low stature and bushy-branched, the limbs usually coming low down upon the trunk. The recent shoots are brownish or reddish gray, but the ground color of the mass of the spray in the winter season is very dark, the bark on many limbs, either from its own decay or from some fungoid growth, being coated with a sooty substance, which may be rubbed off like a black dust. The branches are nearly horizontal, and divide into numerous short, straight and very slender branchlets, on which rest the round or cylindrical buds, often wider than the twigs themselves. The prominence of these buds when the limbs are bare of leaves gives to the spray of the Tamarack a peculiarly roughened appearance, as if covered with wart-like bodies.

Englewood, Ill. *E. J. Hill.*

Plant Notes.

Some Recent Portraits.

The June issue of the *Botanical Magazine* contains figures of the new *Lilium Henryi* (t. 7177), one of the interesting plants discovered by Dr. Augustine Henry in western China. From Dr. Henry's notes it appears that "it occurs in two situations, both near the town of Ichang, in the Hupeh province, on the grassy slopes of precipices at an altitude of 200 to 2,000 feet above the sea-level. A few specimens occur on the eastern side of the dome, a mass of conglomerate, which rises to about 1,800 feet, and which lies ten miles south of Ichang. The plant is very plentiful on the right bank of the Ichang gorge, between the villages of Ping-shan-pa and Shih-pi-shan, and on the grassy slopes of the limestone cliffs inland from the last-named village, from which the path leads up to the Taout monastery, named Yang-tai-kuan." *Lilium Henryi* flowered at Kew in August, 1889. It is a species with bright yellow flowers two or three inches long with lanceolate segments reflexing when expanded from near the base and furnished with numerous red-brown spots, and toward the base with a green keel and a few large clavate bright yellow papillæ; *Cypripedium Klotzschianum* (t. 7178), a showy species discovered in British Guiana during Sir Robert Schomburgk's second exploring expedition in that country. With regard to the affinities of this species, it is stated in Veitch's Manual of Orchidaceous Plants that, "though when not in flower, it is scarcely distinguishable from *C. caricinum*, the nearest affinity is undoubtedly with *C. Lindleyanum*"; *Aphelandra Blanchetiana* (t. 7179), a showy acanthaceous plant and a native of Brazil; *Edgeworthia Gardnerii* (t. 7180), a native of the Himalayas, extending eastward into China and Japan, in which last country it is also extensively cultivated, as it furnishes a valuable

material for making the best kind of paper. The genus contains this species only, and differs from Daphne only in its longer style and stigma. It makes, in Europe, a handsome greenhouse plant when well grown, and formerly was much more frequently cultivated than at present; *Colchicum Sibthorpii* (t. 7181); this is said by Mr. Baker to be the finest of all the Colchicums in cultivation. It is a native of the mountains of Greece and of Macedonia, ascending to an elevation of 5,000 feet above the level of the sea. In its distinctly tessellated flowers it agrees with *C. variegatum* and *C. Parkinsoni*, although the segments of the perianth are much broader than in those species, and the leaves, like those of *C. autumnale*, are suberect, obtuse, and not at all undulate. It has only been introduced lately into cultivation, the corms cultivated at Kew having been sent to the Royal Gardens by Max Leichtlin in August, 1890; the flowers are produced in the autumn and are bright mauve-lilac, and are borne in from one to five-flowered clusters. The perianth has a stout white tube from three to four inches long, with a campanulate limb, oblong-obtuse segments two inches long and distinctly tessellated on the inner surface. The stamens, which are about half the length of the perianth-segments, bear large linear yellow anthers.

Foreign Correspondence.

London Letter.

ORCHIDS.—*Disa Veitchii* is the result of crossing *D. grandiflora* with *D. racemosa*, and is another addition to the many first-rate hybrid Orchids raised in the establishment of Messrs. J. Veitch & Sons, Chelsea. The late Dr. Moore proved at Glasnevin, many years ago, that *D. grandiflora* could be propagated from seeds almost as easily as Gloxinias; Messrs. James Backhouse & Sons, of York, also have raised large quantities of this plant from seeds. The habit and general characters of the comparatively new *D. racemosa* are very similar to those of *D. grandiflora*, while its behavior under cultivation, so far, has been uniformly good, which is more than can be said of the Table Mountain plant. A cross between these two, therefore, was almost certain to prove good in a garden sense, and Messrs. Veitch lost no time in putting it to the test, for *D. racemosa* did not flower in England until 1888, when it bloomed at Kew, yet a plant of the hybrid was exhibited in bloom at the last meeting of the Royal Horticultural Society, although only twenty-one months old. No doubt, the hybrid will be much finer even in a year or two than now, but it is a really first-rate Orchid as it is. In habit and foliage it resembles both its parents, but the flower is like that of *D. grandiflora* in size and form, while in its bright rose-mauve color it resembles *D. racemosa*. The chief merit of this plant lies in its being within the reach of every one, either by repeating the cross or by means of offsets, which are produced freely by both parents, and, no doubt, will be by the hybrid. *D. racemosa* is now represented by about twenty spikes of flowers in the Kew collection. As I have said several times already, it is a beautiful Orchid, and as easy to cultivate as *Odontoglossum crispum*. *D. tripetaloides* is also in bloom here; it has racemes a foot long, each bearing about a dozen white flowers spotted with rose.

Lælia Arnoldiana.—Messrs. Sander & Co. have just flowered a most beautiful hybrid, which they have named in compliment to Mr. Hicks Arnold, of New York. It is the result of crossing *L. purpurata* with *Cattleya labiata*. The plant has the general appearance of *L. purpurata*, and so has the flower, but it differs in having a large labellum, fully two inches across the front lobe, which is colored deep amethyst-purple, darkening to maroon in the throat, where there are a few veins of a golden-yellow color. The sepals and petals are of good substance, and colored a soft rosy mauve.

Sobralia macrantha Keinastiana is a pure white form of the well-known *S. macrantha*. It was shown in flower by Baron Schrœder, and obtained a first-class certificate. It is the best of all the colorless varieties of *S. macrantha* hitherto seen, the sepals and petals being snow-white, the only color being a blotch of golden yellow in the throat of the labellum.

Hæmanthus Katherinæ is a very handsome stove bulb which is so easy to manage, and blooms so freely, that it deserves a place in every collection of stove plants. It was introduced to Kew in 1877, and figured in the *Botanical Magazine*, t. 6778. Since then it has seeded in various gardens, and some of the seedling varieties are much superior to the type. The best is known as Alice Barr, or Superbus, and has very large heads of bloom, one which I saw from Mr. Gumbleton last year being nine inches in diameter and colored rich scarlet. This species does not require to be dried off at any time.

BAUHINIA GALPINI.—This is a promising garden-plant, and, therefore, an exception to almost every one of the many species of Bauhinia which have been tried in the garden at one time and another. It has lately been introduced to Kew by means of seeds sent from the Transvaal by Mr. E. Galpin, who describes it as "a handsome bush, about five feet high, with large red flowers, and certainly the plant of plants so far as the De Kaap vegetation is concerned." Mr. Galpin sent flowering specimens which bore out his statements with regard to the beauty of this species, and the behavior of the plants in cultivation at Kew is all that could be desired, as they grow freely and form shapely elegant pot-shrubs. As yet they are too young to flower, but Mr. N. E. Brown, of the Kew Herbarium, has drawn up a description of the plant, which is published this week in the *Gardeners' Chronicle*. The leaves are of the usual two-lobed form which characterizes all the plants of this genus, and the flowers are in axillary racemes which, in wild specimens, are extremely abundant upon every branch. Being found at an elevation of about 2,000 feet, or not far from the home of *Clematis Stanleyi*, this species is certain to thrive in a geenhouse. Like all Bauhinias, it revels in sunshine and a moderate allowance of moisture. We have plants a yard high which promise well for flowering shortly.

The only other species of Bauhinia which have proved worthy the notice of horticulturists are *B. corymbosa*, from China, and *B. Natalensis*. There are over a score species in cultivation at Kew, and while some, such as *B. Vahlii*, are handsome foliage plants, deserving a place in large stoves, they rarely produce blossoms, notwithstanding their well-known free-flowering behavior in a wild state.

CELMISIA SPECTABILIS.—The Celmisias are peculiar to New Zealand, where they grow at high elevations, and are known as Mountain Daisies. Twenty-five species have been described, and almost every one is of such a character as would find favor in the garden. Unfortunately, however, they are exceedingly difficult to introduce, either by means of plants or seeds, and, notwithstanding the repeated efforts made by the Kew authorities and others, they remain still almost unknown in English horticulture. We possess two, however, namely, *C. Lindsayi*, which has been at Kew ten years, and of which a figure was published in the *Botanical Magazine*, t. 7134, and *B. spectabilis*, of which Messrs. J. Veitch & Sons exhibited a small plant in flower at the last meeting of the Royal Horticultural Society, where it obtained a first-class certificate. This plant was six inches high, the leaves lanceolate, rather rigid, thickly felted beneath with silky wool and silvery upon the surface. The flowers were daisy-like, erect, about two inches across, the disk golden yellow and the ray-florets pure white. There is a very fine example of this species at Kew, but it has not yet flowered. It thrives in a cold pit, where it receives protection from frost in winter and exposure to sunlight in summer. It is a striking and interesting plant even when not in flower. Last year we succeeded in getting from New Zealand to Kew no less than nine species of Celmisia, which arrived alive, but every one failed to grow. If we can only hit upon the right way to import these plants, our gardens will be considerably enriched thereby.

London. *W. Watson.*

Cultural Department.

Memoranda from the Strawberry-field.

AFTER an examination of my rows I am once more of the opinion that we have no berry as yet to surpass Bubach No. 5 for general culture. The season here has been and beyond all precedent, and most berries are severely dried up. All are injured, but Bubach No. 5 gives us good berries and in large quantities. It is a solid and finely flavored fruit, and never badly shaped; the color a deep red. I shall make it my staple berry in fall-planted grounds. It is pistillate, and that is its only drawback. The size is very uniform, the foliage ample, the growth rapid, and the roots strong.

Sharpless must still hold its place as one of the first for quality, size and productiveness; at least on my soil, which is strong clay, it is very productive. I have planted Ontario largely, and it is possible it is not the same as Sharpless; but they are so closely similar that it is not worth while to keep them apart.

Cumberland, for a very early berry, is yet unsurpassed by any I have tried. I am growing fifty sorts, and, year by year, this old acquaintance turns up so fine that it loses no marks of

high standing. The berry is roundish, large and very sweet. It is light red and handsome. There is very little waste from small berries, and never any waste from ill-shaped ones. It not only does well in all parts of the country, but in all localities—in the shade nearly as well as in the sun. I have them growing under my Grape-vines, and even there the fruit is smooth and handsome. Both Cumberland and Sharpless are bisexual.

Haverland has this year failed to give me its usual large berries; but it stands in matted rows. I think this berry, to do its best, must have either hill-culture or be grown in very narrow rows. It is a rampant grower and feeder, and needs room for each plant. It bears enormously, and, at its best, very large long berries. In flavor it is not up to the highest rank. It is pistillate, and not suitable for distant shipment.

Jessie I shall drop out. It needs petting to bring out its best qualities, and is never a heavy cropper. The plant is vigorous and the flower perfect. The quality is also excellent. It has, in fact, enough good points to make it available as a fertilizer for pistillate sorts.

Warfield No. 2 I have tested thoroughly in different fields, and, while it bears good crops, I want no more of it. The berry much resembles Wilson, is quite as sour, and not of standard flavor. The berries hang down close to the ground, and are not as large, on the average, as those of the Wilson. The fruit is solid, and bears shipment well; the blossom is pistillate.

Mrs. Cleveland is not of the best flavor, but it is a superb bearer, and the quality is at least good. The size is very large, and the form not quite regular, but in no way distorted. I do not think any one will make a mistake in planting this berry freely. The flower is pistillate.

A companion berry, sent out by Mr. Townsend, of Ohio, is the Eureka. This pleases me in growth, in berry, in crop and in foliage. The fruit is very large and of fine quality, not equal, however, to Sharpless or Cumberland. The growth is a trifle less luxuriant than that of Mrs. Cleveland, but they both make runners very fast. Both grow well in hill or matted rows. Some varieties, when matted, make so close growth as to stifle each other, which is not the case with either Eureka or Mrs. Cleveland.

Among the not quite new but still scarce sorts I select, as two exceedingly fine ones, Pearl and Florence. Pearl is a truly good berry every way. It stands up well on strong stalks, its form is regular and conical, with a slight neck. It grows rapidly, vigorously, and bears splendid crops. I like the looks of it, both in the row and the basket. The quality is fine. Florence has also a tall stalk, bears freely a conical berry, bright red and handsome. Mark these as attractive berries, and both of them good to win buyers. Florence, with me, makes the largest stools, but Pearl makes the most rapid growth. They can both be planted with confidence. Pearl has a perfect flower and produces pollen freely.

Michel's Early, if I have the real plant, is a disappointment. It is not as early as Crystal City, and not very much larger. It is a rampant grower, a good bearer, and the fruit stands up well. When dead-ripe the flavor is good, but peculiar. It bears considerable resemblance to Crystal City in style of growth and fruit.

Belmont is not a success in my grounds. I think it will be profitable only under a system of highest culture. I am even compelled to drop out that delicious berry, the Prince of Berries, a handsome and excellent fruit, but slow grower and impracticable every way.

Among those that I admire is Summit, and until this year have insisted on growing it. I cannot hold one of the berries in my hand without thinking of a small pear. It is as large as some Seckels, and most delicious; but it is a very poor grower, as well as so slow in ripening, as to make it another of the impracticables.

Gypsey is delicious, early, handsome, medium in size. It is also a moderately good grower, but the quantity of fruit does not warrant large plantings, while the foliage is not strong nor abundant.

One berry I have replanted and am satisfied I did not do it justice by the first test—that is Lida. It bears abundantly large berries of good quality, and has many claims as a first-rate fruit.

Of strawberries, even more than of other fruits, one must speak with much caution, because different varieties require different soil. My own fall-planting will include (1) Bubach, (2) Sharpless, (3) Cumberland, (4) Eureka, (5) Mrs. Cleveland, (6) Pearl, (7) Haverland, and there will be further test of Thompson's No. 51, as well as Tippecanoe, Saunders, Middlefield, Parker Earle and Edgar Queen.

The extraordinary dryness of the present season has taught me the absolute need of irrigation. I shall adopt the easy plan of having my Strawberry-garden below my barn, so that I can carry water to it in pipes from a well. This many can do.

Clinton, N. Y. *E. P. Powell.*

Stray Notes from the Arnold Arboretum.—II.

SOMETHING was said last week in these notes of the beauty of our native Viburnums, and of their great value for planting in gardens, and on the wilder parts of city parks and of large private estates.

Equally valuable, certainly, for such purposes, are many of our native Cornels, several of which are more graceful in habit than any of the Viburnums, and which, although usually not quite as ornamental in their flowers, produce generally more highly colored and showier fruits. The bark of the branches of some of the species is bright colored, and, in winter, when the plants are stripped of their leaves they make a brave show and offer bright bits of color which are invaluable in the winter landscape.

The most beautiful of all the Cornels which grow spontaneously in this part of the world is the so-called Flowering Dogwood, *Cornus florida;* and here, in parentheses, it may be affirmed that this plant is not poisonous. Many people think so because a so-called Dogwood, like the Poison Ivy, has acrid juices which are extremely poisonous to most persons, but here is a case which illustrates the confusion which often follows the promiscuous use of vernacular names for plants instead of the precise and exact names imposed on them by science, and which, in nine cases out of ten, are not more difficult to learn and to remember than English names. "The Poison Dogwood" is not a Dogwood at all, but a sort of Sumach, or Rhus; and the Poison Ivy is not an Ivy or anything like an Ivy, except that it sometimes climbs by the aid of rootlets produced from the stems; and none of the Dogwoods are at all poisonous. Here, then, are three popular errors about three of our most common and best-known plants which have all come from the unfortunate coining of popular names which are now so firmly fixed that they will probably be used as long as the English language is spoken on this continent. It may be a small matter in speaking of a Rhus to call it an Ivy, but it is rather unfortunate when this looseness in the use of language casts a suspicion on one of the most beautiful of all trees. For the Flowering Dogwood, or *C. florida* as people ought to learn to call it, is not excelled in beauty by many other trees.

It has all the qualities which make plants valuable from the ornamental point of view. In habit it is a low, round-headed tree, sometimes at the south forty feet high, but at the north rarely growing to half that height. The flowers, to be sure, are small and not at all conspicuous, but the clusters are surrounded by large snowy white floral bracts or leaves, which, when they are fully grown, make what look from a little distance like white four-petaled flowers, each two or three inches across. These floral leaves, and the flowers themselves, develop before the appearance of the true leaves, so that when the plant is in flower it looks as if it had been covered with a white sheet.

The illustration which was published on page 431, vol. iii., of Garden and Forest shows what a beautiful object this tree is in early spring. The foliage is abundant, ample in size, and of cheerful and pleasant colors, yellow green on the upper surface and pale on the lower. Very few of our trees, perhaps not a single one, are more beautiful in the autumn than *C. florida*. It is worth growing for the autumn effect which the foliage affords, quite apart from its beauty as a flowering tree. Here, in New England, toward the end of October the leaves take on their autumn coloring, a deep and intense red, which makes the trees conspicuous from as far as they can be seen. The color of the leaves changes only on the upper surface, while the lower surface retains its pale color, so that when the wind plays through the branches charming contrasts of color are produced between the upper and lower sides of the leaves. The beauty of the tree in autumn is increased, too, by the abundant fruit which is produced in heads or clusters, each fruit being rather less than an inch long and bright scarlet. Birds are fond of the fruit, and often strip the trees as soon as it ripens, but when it escapes their attention it serves to heighten by contrast the color of the foliage, and gives to the tree a warm, cheerful look which is not easy to explain by words.

C. florida is one of the best of all the small trees to plant in this country as a specimen on a small lawn or in a garden. It needs good soil, and in eastern New England rather a shel-

Fig. 53.—The Bermuda Palmetto *(Sabal Blackburniana)* in the Devonshire Marshes.—See page 302.

tered situation, for we are close to the northern limit of its range, and, although it is found here and there growing wild in the woods, it is a comparatively rare tree, while in the middle and southern states it is one of the most common of all the smaller inhabitants of the forest. The best place, however, in which to plant *C. florida* is on the borders of natural woods—that is, in those situations which it selects itself—on the margins of clumps of larger trees, in woodland glades, and in all the places where an attempt is made to produce by planting natural effects. It can be introduced with advantage much more freely than it has been before into our large parks, in which sufficient attention is rarely paid to making the margins of the plantation as beautiful as it is possible to make them by the use of the material which is ready to the hand of the American planter. It is only in recent years that nurserymen have begun to learn what a valuable and useful plant *C. florida* is, and it can now be purchased in considerable quantities in a few of our nurseries. We should probably have seen more of it in American gardens if it had been a favorite plant in England, upon which country we still depend more than we should for horticultural ideas, and from which we formerly obtained nearly all our ornamental plants. But *C. florida* needs the hot sun of our long summers to thoroughly ripen its wood and to make it flower freely; and not finding in England the proper conditions, it has rarely shown there its real beauty.

Abnormal forms, whether of habit or of flower, rarely equal natural types in beauty, and, as a rule, are not to be commended. There is a variety of *C. florida*, however, in cultivation with pink, instead of white, flower-bracts, which is really a handsome plant, although considerable prejudice has been created against it by the absurd overcoloring of the bracts as they appear in illustrations in the sale-lists of nurserymen who are seeking to make a market for it. The bracts are really delicate pure pink, and trees of this variety planted with those of the common form ought to produce very charming color-effects. There is a variety, too, in which all the branches are more or less pendulous. This is not, however, a very handsome or desirable plant, as the round top and rather formal outline this tree assumes naturally is one of its great attractions.

The forests of North America produce a Cornel which is even more beautiful than *Cornus florida*. This is *C. Nuttallii* of the Pacific coast, which may be described as a giant *C. florida*. It is often a tree sixty feet high or more, with large leaves and immense floral bracts, which sometimes form heads six inches across. For some reason or other this tree does not take kindly to cultivation, and although efforts have been made for years to induce it to grow, they have so far been unsuccessful. Other trees of the region where it grows flourish in Europe, and a few of them, like the Vine Maple, do well here; but *C. Nuttallii* cannot be persuaded to live in cultivation for more than a year or two. The seeds germinate freely enough, but the seedlings go off before they are a foot high. If these notes are read by any one who has succeeded in cultivating this tree he will confer a favor on the readers of Garden and Forest if he will give them the benefit of his experiences with it.

The Asiatic representatives of this peculiar group of Cornus with large flower-bracts, which, although they are really Cornels, are generally spoken of as Benthamias, are less showy in flower than *C. florida*, although the Himalayan species (*C. capitata*) produces much larger and finer heads of fruit; this is a beautiful tree, which ought to be planted in the south, where, in some regions like central Georgia, it would doubtless succeed. The Japanese plant of this section (*C. Kousa*) was introduced into our gardens many years ago, and now flowers in the neighborhood of New York every year. Here it is not very hardy, and, as an ornamental plant, has nothing to recommend it over *C. florida*, for a poor form of which it might well be mistaken.

The eastern states produce a number of shrubby Cornels and one arborescent species besides *Cornus florida*. This is *C. alternifolia*, so named because the branchlets and the leaves, instead of being placed opposite to each other on the branches, as is the case with most of the Cornels, are alternate. This plant, like some of the Viburnums, is a surprise to most persons who see it well cultivated for the first time and who are unwilling to believe that this common road-side shrub, or small tree, can become such a wonderful object when it is set in rich soil and allowed to develop its peculiar method of growth. This peculiarity consists in the whorl-like arrangement of the branches, which leave the main stems at right angles and form flat stages one above the other, the whole making a regular pyramid from the ground upward. In old age the lower branches usually disappear; the upper branches lengthen out and form a low flat top which is very characteristic of the species as it appears in its native state, growing in broad coppices on rich hill-sides, or by the borders of country roads, where it is often very common, or near the margins of swamps. The branchlets of *C. alternifolia* are bright green and more or less streaked with white. The leaves, which taper at the two ends, are not more than three or four inches long and are clustered near the ends of the branchlets; they are light green in color, with yellow shades, and very bright and cheerful, but in autumn do not assume a brilliant color before falling. The flower-clusters, which stand up all over the top of the flat branches and so make a great show, are not individually very large, and the flowers of which they are composed are small and pale yellow; and it is the arrangement of the flower-clusters and their great number which make this such a conspicuous plant in the middle of June and not the individual beauty of the flowers. The fruit, which is deep blue when it is ripe, is very beautiful, however, its appearance being heightened by the contrast it makes with the bright red stems on which it is borne.

C. alternifolia has been very largely planted in the Arboretum in many situations, and has proved satisfactory in all of them. It is, perhaps, most ornamental as it stands near the margins of the roads and has been given sufficient space in which to send out its wide-spreading branches. It is not to be surpassed, however, as a specimen plant for the lawn, and it is surprising that its beauty for such a use was not recognized long ago; or it would be surprising in any country except this, where the almost entire neglect of native plants is one of the remarkable and unfortunate features of the recent development of American horticulture.

In another issue of these notes the claims of some of the shrubby Cornels of our wood-sides for ornamental planting will be considered, and something will perhaps be added concerning a few foreign species.

Arnold Arboretum. *P. C.*

A Few Irises.

THE Japanese Irises are at present the most attractive flowers in the hardy garden, and their wonderful blooms will continue for several weeks to make the principal display of the season. Among the countless Irises, *I. lævigata* is unique for entire distinctness of flower both in form and coloring. The petals or falls, while having a tendency to flatness, show all manner of graceful curves and wavings as they expand, and are free from all stiffness and coarseness so usual in large flowers. Their colorings are as singular as their forms, the most attractive, to my taste, being the pure white ones and those with violet veinings. Among them are deep dull reds and purples, nearly black, not without attraction. With flowers gracefully poised over the tall rush-like leaves, and swaying to every breath of wind, there are few more attractive plants of any season than Kæmpfer's Irises.

A few Irises loosely arranged in a tall vase make a striking floral arrangement. Their flowers are not very lasting if plucked when fully expanded, but if cut before they commence to unfold they retain their freshness several days. Like many of the flowers which ripen their pollen rapidly and are self-fertilizing—Poppies and single Dahlias, for instance—cutting at an early stage gives them a check, the pollen matures more slowly, and they retain their petals much longer than if plucked later.

A writer in Garden and Forest some time since expressed a fear that some one would double the Iris. As these Irises are the only species possessing double flowers, perhaps I may be permitted to say here that it seems a hypercritical taste which would object to them. The number of petals is simply doubled, making a flower with a somewhat full outline. Among the numerous forms of Japanese Irises it is doubtful if any are finer than the kinds originally imported by Mr. Thomas Hogg, which were the first seen here. One can secure, however, an endless variety, and as they cross readily and have a tendency to sport, it is interesting to grow seedlings. They seed freely, and strong plants may be had from these the third year. In any position the flowers are large enough to please the average grower, but where very large flowers are desired it is usual to grow the plants where they can have large supplies of water. It will not do, however, to plant them in standing water, for they are not aquatic—at least they do not grow for me with roots submerged.

In my limited experience I find it difficult to believe that any of the Irises are properly classed as aquatic. Of course, I am aware that a number of varieties are found in standing water, and live and grow under this condition, but I do not

know any variety which does not grow better in a less wet position. Remove an *I. versicolor* from the marsh, where it is often found, and plant it in a damp border, or even a moderately dry one, and it will be found to grow much more vigorously, with taller foliage and abundant flowers. Perhaps nature does not make a mistake exactly in planting them in marshes, but their usual location there is probably due to the fact that their abundant seeds find in such a place the necessary moisture for their germination.

In writing plant notes one usually hesitates to recommend plants for general culture, but in the case of Japanese Irises there can be no hesitation in saying that they are plants for everybody and every garden, large or small, grand or humble. They are not continuous bloomers, but, when not furnished with flowers, the tall rush-like foliage is persistent and attractive through the season.

I. juncea and *I. Pavonia*, just out of flower, are two bulbous Irises which cannot be so strongly recommended for general culture, but they are plants of great beauty, if of somewhat less pronounced a type, and are well worth the necessary attention. *I. juncea*, the rush-leaved Algerian Iris, proves hardy here in a warm border. The foliage is very narrow, about a foot high. The flowers are large, of a clear, deep, golden yellow, and are about the most attractive Iris flowers of this color. *I. Pavonia*, the Peacock Iris, is (or was) botanically known as a Moræa, and is a Cape bulb, and, as such, is usually treated like the Ixias in a frame or cold house, where they come into bloom in May or June. Their flowers are very attractive, with white falls distinctly blotched at the base with a peacock eye. The flowers are small, and their beauty is of a dainty order. These bulbs, I find, are fairly hardy, as they flowered a few days since in a very exposed border where they were planted in October. Such a position, however, is scarcely suitable, and possibly the experiment might not be often so successful.

Elizabeth, N. J. *J. N. Gerard.*

Notes on American Wild Flowers.

Lilium Grayi is one of our best native plants. It is not only a very attractive species when in bloom, but it seems to be as easy to grow as the common Meadow Lily or the Swamp Lily. It is about the same height as the *L. Canadense*, and the color is a mixture of red and yellow, as with some varieties of that species; but the petals of the long funnel-shaped flower are not reflexed, as in most of our species, and this distinction is its most prominent feature. It is among the first to flower, coming into bloom about with *L. Parryi* and a little later than *L. Columbianum*. A rare local species, inhabiting certain portions of the southern Alleghanies, *L. Grayi* has not until quite recently been easy to obtain.

The purple Corn-flower (*Echinacea purpurea*), which flowers early in June, is a striking member of the composite family, about three feet high, bearing one to three, or sometimes more, large rose-purple flowers with a brownish purple centre. If the petals stood out horizontally the flowers would be from three to five inches wide, but they generally have a half-drooping habit, which not only lessens the width of the flower, but it gives them a peculiar appearance. It ought to be a useful plant in cultivation. Its odd shape and color and time of flowering are all in its favor.

Coreopsis palmata is a more erect plant in habit than *C. lanceolata*, which is so generally cultivated. Its flowers, though not so large and showy, much resemble those of *C. lanceolata*. It seems to be a little later in flowering, so that it would afford cut blooms after *C. lanceolata* had passed. It is quite as hardy as the other, and needs the same soil and sunny exposure.

Asclepias purpurescens (Purple Milk-weed), which grows on dry banks and borders of woods, comes into flower early in June, and is one of the most showy species. To me it is quite as attractive a plant as the Butterfly-weed (*A. tuberosa*), which has been in cultivation for some time, and blooms earlier. It is frequently seen in the shade, but the richest flowers are found in full sunlight. It transplants well, and needs no special treatment.

Monarda Bradburyana is our earliest species, growing in dry half-shaded places, only about fifteen inches high, and bearing a terminal whorled head of pale purple flowers. A useful plant for a dry partly shaded place, remaining a long time in flower. Its near relative, *Blephelia ciliata*, flowers only a few days later, and has slightly darker flowers.

Nemastylis Brunnea, Watson, is a new species which Mr. Pringle found in Mexico in the summer of 1889. Its flowers are open, bell-shaped, nearly an inch wide, light purple outside, and yellow-purple and white within. It has a long grass-like leaf much like some of the smaller species of Tigridia, and needs the same treatment. The flowers seem to be a little more durable than are some of this genus.

Pentstemon lævigatus, var. *digitalis*, bears large showy heads of white flowers. The heads or panicles are often four inches or more in length, well filled with the large flowers, which are an inch or more long. It likes a moist, but not wet, clay soil, either in the full sunlight or in partly sheltered situations.

Botanical Garden, St. Louis, Mo. *F. H. H.*

Rogiera gratissima.—This beautiful greenhouse-plant resembles a Laurustinus in growth and general habit, and, like it, produces flowers in large terminal trusses. A native of the highlands of Central America, it does well in a cool greenhouse, with the same treatment given to Camellias. It is best to plant it out, as it likes root-room. The fragrant flowers are produced several times each year. The foliage is bold and of a rich dark green. It is a very free bloomer, and when young should have some of the flower-buds pinched out as they appear, or the plant will be weakened by over-blooming. It is easily propagated from cuttings taken from half-ripened wood, and placed in a gentle bottom heat.

Maywood, N. J. *James P. Taplin.*

An Orchid Anthracnose.—Several complaints have reached us from Orchid growers of a decay which, in its worst form, destroys entire plants. The trouble is first noticed by a discoloration of the stem, which rapidly turns brown, and almost black, the succulent interior becoming a mass of decay. Following this, upon the smooth exterior, small pimples appear, which finally develop into the spore-bearing spots of the fungus—a species of Glœosporium. It does not appear to be the *G. cinctum*, B. & C., of the Orchid, as its spores are twice as large, and straight instead of curved. However, the main point to insist on is, that the trouble can readily spread through an Orchid-house if the keeper neglects to collect and burn all decaying stems or leaves in their early stages of decay before the fungus has time to mature its crop of rapidly germinating spores.

Rutgers College. *Byron D. Halsted.*

Correspondence.

The Cultivation of Acacia Farnesiana, or Cassie, in Europe.

To the Editor of GARDEN AND FOREST:

Sir,—These notes on the cultivation of a North American tree in Europe may interest some of your readers. The *Acacia Farnesiana*, commonly called in France Cassie or Cassier, is a large shrubby tree in cultivation here, eighteen to thirty feet high, according to the fertility of the soil where it grows, with spiny branches, compound leaves, and orange or yellow fragrant flowers collected in small globular axillary heads on the branches of the year. It is cultivated in various parts of Provence for its flowers, used in the manufacture of perfumes, especially in the neighborhood of the town of Grasse, which is the centre of this industry.

A sandy soil is preferred for Cassie, and situations on the southern slopes of hills open to the sun and protected from the cold north winds. The plant is destroyed, or the branches, at least, are killed back if the thermometer falls below six degrees centigrade below zero, a rare occurrence in the regions where it is cultivated. *Acacia Farnesiana* succeeds equally well on limestone soil and grows to a larger size than it does on granite; it flowers, however, later, and this is a serious objection, as the flowers which appear late in the season are much less fragrant than those developed earlier. The plant is propagated by seeds, and their germination can be hastened by soaking them in water for thirty or forty hours in order to soften the outer coat.

The seed is sown in March and April in beds of carefully prepared soil, exposed to the south, and these beds are frequently watered to hasten the germination of the seed and the growth of the young plants. The following year these are transplanted to the ground where they are to stand permanently, and are set six feet apart each way in order that they may have sufficient room for the development of their branches, and to allow the cultivation of the soil between them with the plow, or, as is usually the case, by hand. The ground should be kept clean between the plants, and it is usually thoroughly cultivated every spring, and enriched from time to time with a good coating of manure. As the flowers

are gathered by women and children it is necessary to prevent the plants from growing to their full height. To accomplish this it is customary to stop the main stem of the young plant at about two feet from the ground. This causes it to form several main branches, and these are cut every year in such a manner as to give to the plant the form of a vase, this being the shape best suited to produce the largest quantity of flowers near the ground, the plants being kept down to a height of five or six feet. The plants continue to produce flowers from the middle of summer to the middle of autumn, and a few flowers continue to appear until frost, that is, until the middle of November or the commencement of December. The first flowers, however, those which open during hot weather, are much more valuable than those produced late in the season. For this reason cultivators use every effort to advance the flowering period.

The flowers are always gathered in the morning and are turned over at once to the manufacturers. It is estimated that a fully grown plant in good condition will produce a kilogram of flowers during the season worth from five to seven francs, according as the supply is more or less abundant. A hectare (about two and a half acres) produces, on an average, eleven thousand pounds of flowers.

The flowers are never distilled, the only process used to extract the perfume being that known as "enfleurage." The essence of Cassie is used in the preparation of pomades, to perfume oils or to make extracts of different species, the preparation of which is more or less the secret of the perfumers of Grasse. The process of "enfleurage" consists in spreading flowers over glass plates covered with a layer of pure grease three or four millimetres thick. This is turned over two or three times a week, or until it is impregnated with the perfume—a process which usually requires a period of twenty-five or thirty days. The impregnated grease is then distilled in order to obtain the pure essence, a kilogram of flowers producing three or four grams of the essence. The process of "enfleurage" is also performed with hot oil. Olive oil of the best quality is poured into large heated kettles, into which are put the Cassie-flowers. The oil is then heated to the boiling point, or almost to the boiling point. Workmen provided with large wooden spoons keep turning the flowers to prevent them from falling to the bottom of the kettle, where they would burn. When this operation has been continued long enough the whole of the contents of the kettle, flowers and oil, is poured into little sacks, which are compressed under an hydraulic press. In this way the perfumed oil of Cassie is obtained. It is not easy to explain these processes, and they cannot be thoroughly understood unless they can be seen in operation.

In addition to the typical *Acacia Farnesiana* a remarkable variety, discovered about fifteen years ago, is now cultivated. This is the *Acacia Farnesiana sempervirens*. It is said to be much more valuable than the ancient form, and is a larger, more robust and productive plant. It requires, however, more room. Plants of this variety ought not to be set less than fifteen feet apart, and need abundant watering and manuring during the summer. This variety is hardier than the type, and it grows more rapidly. Its principal advantage over the ordinary *Acacia Farnesiana* is found in the fact that it produces two crops of flowers in a year—the first at the end of the summer, the other in the spring. It is now largely and profitably cultivated in the neighborhood of Grasse.

Antibes, France. *Charles Naudin.*

Forest Fires.

To the Editor of Garden and Forest:

Sir,—During the month of May the papers were filled with accounts of forest-fires, but only a fraction of the cases where serious damage is done is ever reported in the press. Where one acre of valuable Pine is destroyed, there are 80 or 100 acres burned over of what would be a forest in the future. Whole townships were literally devastated, and a cloud of smoke more or less dense hung over the whole of northern Wisconsin and the upper peninsula of Michigan, as well as the northern part of the lower peninsula of Michigan. From a private source I learned of one lumberman losing 50,000,000 feet of standing pine in primeval forests. Numberless camps, with all their outfit, including even the horses in some cases, have been destroyed, with vast quantities of lumber and logs, and dams used for driving logs; in short, everything which fire can consume is swept away by these conflagrations. They cannot be stopped or checked. Spread over a large area, the induced currents of air become fierce gales, the heat becomes so intense that men cannot bear it; the sand becomes red-hot, and turf and mold and roots of trees—everything burns. Sparks and flaming brands are carried long distances beyond the line where the fire is raging, starting blazes in new places; rivers and swamps offer no obstructions. Even rain is but a temporary check, and when the next dry time comes, from smoldering embers in decayed trees or from the depth of some body of turf, the flames break out afresh. Smothered fires may keep alive in such places until a heavy mantle of snow finally puts them all out. How are our Pine-woods to have insurance against fire under such conditions? Generally speaking, our hard-wood forests are proof against fires to the extent, at least, that old forests do not easily suffer. This is not always so, however, and in severe fires like those of the present year mile upon mile of hard-wood timber may be destroyed.

The lumbermen are careful in all their operations not to allow fire to escape them. Farmers, in clearing the land by burning, and hunters and fishermen are usually the culprits, and timber-owners are helpless to prevent it. "What are we going to do about it?"

Milwaukee, Wis. *Charles L. Mann.*

Old Fort Erie.

To the Editor of Garden and Forest:

Sir,—There is a historic spot in plain view from this city that is curiously favored by nature, and yet but for the near neighborhood of an excursion steamer's landing it would be rarely visited. Old Fort Erie is now nothing but a bewildering labyrinth of tumble-down walls and grass-grown embankments, a simple pasture-field, with no habitation near, but it has a breezy situation and a wonderfully varied outlook. The soft outline of Lake Erie, and the steady, quiet flow of the Niagara as it leaves the lake, have no suggestions of war, and one is delighted to find the whole slope on which the fort lies sown, as it were, with that old favorite of all lovers of sweet-scented flowers, the thorny Sweet-brier, or Eglantine (*Rosa rubiginosa*). The heavy turf and unprotected field seems not at all suited to this shrub, yet it is here in profusion on every side of the fort, and when the bright pink blossoms are out, here about the last of June, the air is loaded with fragrance.

I find Sweet-brier stems close under the remaining walls of the fort at least an inch and a half through, though sheep-pasturage has kept most of the plants small. New shoots are now coming up of an almost scarlet hue in their luxuriance, and, as they are simple at first, like the Bramble, they are very striking. But for the pasturing the field is subjected to, it would be a wilderness of Sweet-brier, for the moat no longer holds water, except here and there, where the shallow depths are given up to Water Plantain, crawfish and snails.

As if the Eglantine alone were not considered striking enough for the spot, there are scattered over it two species of Thorn (*Cratægus coccinea* and *C. tomentosa*), the former of which is (June 6th) in full blossom, and the latter just beginning to show bloom. These masses of white flowers, soon to be replaced by the delicate pink of the Sweet-brier, seem a sort of mild reproach to the nations who within the century made war on each other in this now most peaceful and restful spot.

Along the river opposite the old fort at this season only two or three wild plants are conspicuous. *Cynoglossum officinale*, or Hound's-tongue, grows with especial vigor, and the shaggy Henbane (*Hyoscyamus niger*) is now in blossom. Later on *Datura Stramonium* forms thickets on the bank close to the water.

Buffalo, N. Y. *J. C.*

Recent Publications.

The Second Annual Report of the Missouri Botanical Garden, St. Louis, 1891, has reached us. It contains the report of the officers of the Board, the second annual report of the director, an account of the proceedings at the first annual banquet given by the trustees to gardeners, florists and nurserymen, which was held in December of last year at the rooms of the Mercantile Club, and finally Professor Trelease's revision of the "North American Species of Epilobium," which is accompanied with forty-eight lithographed plates. The volume is further illustrated with views, taken in the greenhouses of the garden, of a neglected and of a well-pruned Apple-tree, and of some bunches of Delaware grapes, showing the good results obtained by bagging. Professor Trelease, in his report, shows that solid work is being done in the garden, which is better equipped financially than any similar establishment of its kind in the world, the total receipts of income from September 1st, 1889, to December 31st, 1890, having amounted to no less than

$120,841.93, an income which ought to enable the managers to develop in time the most important botanical establishment in the world.

Professor Trelease has, very wisely we think, devoted much attention to building up a great library and to placing the herbarium on a good working basis. These two are always the important departments in a garden of this nature. Without them a scientific garden cannot be maintained or operated, and its fame and usefulness will be great or small in proportion as these departments are largely or imperfectly developed. The garden is fortunate in possessing the herbarium which was formed by the late Dr. Engelmann, and which is especially rich in those families of plants which he studied specially, such as the *Cactaceæ*, the Conifers, the Oaks, the Gentians, etc. It contains the types of many species, and must always be consulted by persons who desire to learn everything that there is to be known about these plants.

The library, it appears, has received constant additions during the year, no less than $6,000 having been expended for the purchase of books. Numerous donations, all mainly in the form of pamphlets, have been made to it. Little attention has been paid to the purchase of recent works, the available funds being used in securing rare old works and in completing the necessary sets of serials. This is as it should be, for the older books on botany are every year becoming scarcer and more expensive, and good judges of such matters believe that at the end of another fifteen or twenty years many standard works will have entirely disappeared from the market, many public libraries now buying them, not only in the United States, but in Australia and other English-speaking colonies.

We venture to congratulate Professor Trelease on the substantial progress he is making in building up an institution which Mr. Shaw's liberality has made possible. That his success is real, and that he is working on the right lines, this handsome volume abundantly indicates.

The Forest-trees of North America. By Asa Gray. Plates prepared between the years 1849–1859. Smithsonian Institution, Washington, 1891.

When the Smithsonian Institution was established, the first secretary, the late Professor Joseph Henry, proposed to publish a series of contributions to knowledge consisting of memoirs on different branches of sciences, as well as a series of reports on the progress of knowledge to be of a more popular nature and intended for wider distribution than the contributions. The second of the latter series undertaken by the Institution was announced in the secretary's report of 1848, and was to consist of a report on the forest-trees of North America, by Dr. Asa Gray. It was intended in the work to give figures from original drawings of the flowers, leaves, fruit, etc., of each principal species in the United States proper, for the most part of the size of nature, and so executed as to furnish colored or uncolored copies, the first being intended to give an adequate idea of the species, and the second for greater cheapness and for general diffusion. It was proposed to accompany this report with an introductory dissertation giving the present state of the knowledge of the subject, divested as much as possible of all unnecessary technical terms, of the anatomy, morphology and physiology of the tree, tracing its growth from the embryo to its full development and reproduction by the formation of the fruit and seed. A number of plates of this work were made, but Dr. Gray's absence in Europe, and the many calls made upon his time while at home, prevented him from ever preparing any text to accompany them. The work was found to be an expensive undertaking, and after about ten years had been devoted to preparing a number of plates it was finally suspended, and the whole matter was allowed to rest until some more favorable opportunity should present itself for carrying it on. This time never came, and the stones engraved from beautifully colored drawings by Isaac Sprague, with a number of imprints from them, remained in Dr. Gray's custody at Cambridge until after his death, which occurred three years ago. They were then sent to Washington, and the present secretary of the Smithsonian Institution, Professor Langley, has determined to distribute them to the principal botanists and museums of the world "as mementos of the distinguished man who gave so much of his life and labors to this department of knowledge." They are now issued in pamphlet form. The species which are illustrated are *Magnolia grandiflora, M. glauca, M. Fraseri* (which to our mind is the most attractive picture of the series), *Liriodendron Tulipifera, Tilia Americana, Acer rubrum, A. spicatum, Æsculus glabra, Æ. discolor* (that is, *Æ. octandra hybrida* of the new Silva of North America), *Æ. parviflora* (which can hardly be considered a tree), *Robinia Pseudacacia, R. viscosa, Cercis Canadensis, Gymnocladus Canadensis* (the staminate flowers only being shown), *Gleditschia triacanthos, Prunus Americana, P. Chicasa, Cerasus Pennsylvanica, C. Virginiana, C. serotina, Pyrus coronaria* and *Cornus alternifolia.*

Exhibitions.

The Massachusetts Horticultural Show.

THE Rose and Strawberry Show of the Massachusetts Horticultural Society, held in Boston on Tuesday, Wednesday and Thursday of last week, fell far behind similar exhibitions in late years, both in the number and quality of the exhibits. This was due to the unprecedented weather of the previous month. A dry spring with late frosts was followed in early June by a period of exceptional drought, with three or four days of intense heat, followed in the week preceding the show by a cold rain-storm of several days' duration. Nothing could be much worse for the production of good Roses, as the exhibition showed.

The local exhibitors made a poor show, and if it had not been for the large collections of flowers sent by Mr. Joseph S. Fay, of Wood's Holl, Massachusetts, there would hardly have been a Rose show at all. The effect of climate was clearly shown in Mr. Fay's flowers, which have been subjected to less trying conditions than those grown in the eastern part of the state. Mr. Fay took no less than eight first prizes for Roses, besides making a good show of vegetables, for which he took also several prizes. Among individual Roses shown none, perhaps, were better than the pure white Gloria Lyonaise, a rather tender Rose usually, but this year seen in unusual perfection. Very fine, too, were Prince de Portia and Thomas Mills. Unusually good specimens of Her Majesty, a very miffy subject usually, were shown by William Patterson, of Quincy. The special prize for the Ulrich Brunner Rose, offered by Dixon & Sons, of Belfast, brought out some good examples of this fine Rose—Joseph S. Fay being awarded the first and John L. Gardner the second prizes.

Mr. E. W. Gilmore, of North Easton, staged a collection of small, well-grown and well-flowered Orchids, taking the first prize for six, the second going to John L. Gardner. The prize for the best specimen Orchid was also awarded to Mr. Gilmore for an excellent plant of *Phalænopsis grandiflora.* A remarkable specimen of *Ouviranda fenestralis* was shown by R. Gardner, gardener to Cornelius Vanderbilt, Esq., of Newport. This is a curious aquatic plant from Madagascar known as the Lace-leaf, or Lattice-leaf-plant, with long narrow leaves composed of a net-work of vascular tissue resembling lace or a window covered with lattice-work. It has to be grown in water in a high temperature. Mr. Gardner's plant was admirably grown, and was shown in a large tub of water placed immediately under an electric light, so that visitors in the evening could see and enjoy the peculiar structure of the foliage. Benjamin Gray, of Malden, showed a tub with a flowering plant of the always attractive and interesting Japanese Nelumbium, and the Hon. Robert C. Winthrop sent pots of Gloxinias and of tuberous Begonias, besides a large collection of Gloxinia-flowers of an excellent strain.

The Strawberries, like the Roses, showed the effects of the dry season. The first prize was taken by Mr. Joseph S. Cowles, the gardener of Fairman Rogers, Esq., of Newport, for Sharpless. The second and third prizes were taken by Belmont, now a great favorite in eastern Massachusetts, as judged by the number of exhibits of this variety. Among newer kinds, the Haverland seemed to be the most deserving.

Mr. Fay showed specimens of Blonde Blockhead Lettuce of enormous size, surpassing, it is said, anything ever seen before in Massachusetts, although inferior to the Deacon Lettuce, sent by the same contributor, and which took the first prize.

Notes.

The third and final part of the "Provisional Host-Index of the Fungi of the United States," by William G. Farlow and A. B. Seymour, has appeared.

Mr. H. W. S. Cleveland, of Minneapolis, has associated with him, as an active partner in the professional work of landscape-gardening, his son, Mr. Ralph D. Cleveland.

Our correspondent, Mr. George Dawson, the assistant director of the Geological Survey of Canada, has been appointed a commissioner on the part of Great Britain to settle the Behring Sea controversy.

In reply to an inquiry from a correspondent, whose address has been mislaid, we would say that the parts of Hooker's "Icones Plantarum" cost four shillings each, and can be obtained from Williams & Nordgate, 14 Henrietta Street, Covent Garden, London.

The *Los Gatos* (California) *Mail* is authority for the statement that the manufacture of perfumes has begun in that town. One woman has a Rose-plantation of some sixteen acres in extent, besides Orange-trees, Acacias, Rose Geraniums and other plants bearing sweet-scented flowers.

The Hazel is not regarded in this country as a very valuable nut-bearing tree, and we doubt whether it is cultivated to any great extent. But it is more esteemed in Germany, as is shown by a pamphlet recently published at Berlin, in which the best methods of cultivating the Hazel are explained and a list of "eighteen chief varieties" is given.

An idea of the beauty and value of the new Japanese Lilac, *Syringa Japonica*, can be obtained from the fact that there is now a specimen in Mr. William B. Bacon's garden in Jamaica Plains, a suburb of Boston, only fourteen feet high, bearing one hundred and thirty clusters of flowers, many of them being from two to three feet long and eighteen inches or two feet broad.

The officer appointed by the State Board of Horticulture of California has seized 375,000 Orange-trees, just imported from Tahiti, because they are infested with different varieties of scale insects. They were intended for San Bernardino County, and if permitted to enter without being properly fumigated these insects would have spread throughout the choicest orange district in southern California.

The June issue of *Le Journal des Orchidées* contains an interesting and sympathetic notice of the late Paul Emile de Puydt, the distinguished Belgian writer upon horticulture, who died on the 20th of May last. He was a constant contributor to the horticultural press, and in 1860 published his *Traité de la Culture de Plantes de Serre Froide*. This was followed six years later by *Les Plantes de Serre*, and in 1880 by *Les Orchidées*, a work full of valuable information.

Among the newly introduced or still unfamiliar American plants recommended in the May number of the *Illustrirte Gartenzeitung* of Vienna are a brilliant orange-colored Coleus, Prince of Orange, which is declared to be the most splendid open-air sort yet grown; Nott's Excelsior Pea; the Remotant Pink American Flag; *Rhododendron occidentale*, from the Sierra Nevada Mountains; *R. Vaseyi*, of the Alleghenys, and the smaller and rarer *R. macrophyllum*, which is more commonly called, in Germany, *R. Washingtoni; Wistaria Chinensis floro albo*, a Chinese plant, but introduced into Germany by an American firm; four new Roses, Souvenir of Beauvoir House, Miss Winnie Davis, Miss Mildred Lee and Flor-Field (?); *Hibiscus Californicus*, and the Idaho Pear.

Monsieur Franchet describes and figures in the mid-June issue of the *Revue Horticole* his *Jasminum polyanthum*, discovered in 1883 by the Abbé Delavay growing in hedges in the neighborhood of Tarpin-tzé, a small town of Yun-nan, in China. This beautiful species, which Monsieur Franchet suggests will flourish in southern France, and possibly in regions of severer climates, is related to the well-known *Jasminum grandiflorum*. Its leaves, however, are much larger than those of that species, and of a different form, and the calyx-teeth are longer. It is remarkable in the great quantity of flowers which it produces in its native country, for the plant is not yet known in cultivation. The flowers are of a bright rosy flesh-color on the exterior and snowy white on the interior, and are possessed of the delightful perfume found in many species of the genus.

In his "Flora of New Bedford and the Shores of Buzzard's Bay," Mr. E. W. Harvey remarks that the favorite color of nature in that region is yellow in its different tints and combinations. In a number of species there are as many of a white or whitish color, but these are for the most part diminutive and inconspicuous. The various shades of yellow are more noticeable in spring, owing to the size and abundance of the flowers of a few common species, such as Buttercups, Dandelions, Potentillas, Calthas, etc., but there are really as many white-flowered species, though the flowers are smaller. Reds are not abundant at any time, but more common in the summer months. Purples are most frequent in August and September, when they rank next to the yellows, while the blues are more rare than any other color, and flowers of this hue are small in size, with the exception of the Iris, Lupine, Chicory, Aster, Pontederia and Gentian. The percentage of each color, computed by the number of species, is as follows: White, 33; yellow, including orange, 33; red and blue purples, 15; red, including crimson, scarlet and rose, 12; blue, 7.

Mr. E. S. Carman observed, on one of our recent hot days, that the Rose-bugs invariably sought the shade. Several of the beetles were then caught and placed in a paper box exposed to the sun. The thermometer in the box rose to 110 degrees and the insects died. Hot water was then tried, and it was found that the beetles were killed by water at a temperature of 125 degrees. The experiment was then made of heating water to 170 degrees and then spraying it upon some Magnolia flowers which were covered with the Rose-bugs. By the time the spray reached the insects it had been reduced to a temperature of 120 degrees, and it killed them without injuring the foliage or the flower. This experiment indicates that we may have a cheap and practicable check upon the ravages of this dreaded pest. It is plain that the nozzles which divide the water into mist are not the best for this purpose since the spray will hardly retain enough heat to kill the insects. A nozzle which emits coarser streams would be more effective, and it could be used at a greater distance. It is hoped that a trial will be made of this simple remedy wherever an opportunity offers.

We have received from Mr. Samuel C. Moon, of the Morrisville Nursery in Morrisville, Bucks County, Pennsylvania, flowering specimens of *Magnolia Kobus*, a Japanese species, which produces flowers before the appearance of the leaves, in early spring. Mr. Moon informs us that his specimen, which is now twenty feet high, with a straight trunk, about six inches in diameter, flowered for the first time in 1889, which is probably the first time that this species has ever flowered in the United States. It was planted by the late Mahlon Moon about twenty years ago, and was obtained it is supposed from Hovey & Co., of Boston, who had undoubtedly received it from Thomas Hogg, who, about that time, introduced many Japanese plants into the United States. The flowers of *M. Kobus* are smaller than those of *M. conspicua*, but they are pure white and very fragrant, and if the tree, with age, develops a free-blooming habit, it will prove a desirable addition to our gardens, as it is one of the hardiest of all Magnolias, perhaps the hardiest in eastern Massachusetts, where there are now several specimens of this tree raised from seed sent some years ago to the Arnold Arboretum from the northern island of Japan. None of these plants, which are now twelve or fifteen feet high, have yet flowered. *M. Kobus* was distributed in this country under the name *Magnolia Thurberi*, an unpublished nurseryman's name.

In view of the fact that the Hop plant-louse has appeared in alarming numbers in New York, Oregon and Washington, Professor Riley has prepared a bulletin which explains the main facts in its life-history and the remedies best known against its ravages. Since it was discovered a few years ago that the eggs of this insect were laid in the autumn on different varieties and species of the Plum, both wild and cultivated; that from these eggs were hatched in early spring stem-mothers of a dozen generations, and that the third generation of lice being winged desert the Plum-trees entirely and settle upon the Hops for their summer's work, it has become possible to devise an intelligent plan of attack. It is found: (1) That it will pay to spray the Plum-trees with some preventive application either in the spring, before the lice migrate to the Hops, or in the fall, after the lice have returned from the Hop to the Plum and are making preparations to lay winter eggs. The latter time is preferred, because in the fall the Plum-trees will be less susceptible to the action of poison, and stronger solutions can be applied without damage to the trees. (2) That all wild Plum-trees about the woods through the Hop-growing country should be destroyed. (3) That Hop-vines should be burned or drenched with a kerosene emulsion as soon after the crop is harvested as possible in order to kill the males. It is too late for preventive work of this sort this season, and the only thing now to be done is to spray the vines with some insecticide to kill the lice already there. Fortunately, the individual Hop-grower can be assured that his work cannot be thwarted by the carelessness of his neighbors, because the summer lice are wingless, and can only migrate by crawling from one yard to another. The bulletin goes on to state that the best insecticides for *Phorodon Humuli*, so far as known, are kerosene emulsions and fish-oil soaps. The proper method of preparing these mixtures, and the description of the best spraying apparatuses, have often been published, and they are repeated, with illustrations, in this bulletin.

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